Please replace the second full paragraph on page 7 as follows:

With reference to the notations in Fig. 3, the time-domain approach to enhancing vertical resolution of data logs in accordance with the present invention is illustrated in Fig. 6. In particular, in accordance with the present invention the following approach is used. First, construct a time domain averaged echo train as follows: for time t, take an average of echos over a time interval Δ, as defined by the following expression:

Marked up versions of the revised paragraphs, where added text is underlined and deleted is placed in brackets are included in Appendix A.

IN THE CLAIMS

Please cancel claims 1, 2, 10, 11, 18, and 19 without prejudice.

Please amend the following claims:

3. (Amended) A method for measuring an indication of attributes of materials containing a fluid state, the method comprising the steps of:

providing a time-domain signal indicative of attributes of said materials in a single measurement;

constructing a time-domain averaged data train from said signal, the averaging being performed over two or more time intervals Δ_i, wherein at least two of said two or more time intervals Δ_i are different; and

computing an indication of attributes of said materials from the time-domain averaged data train.

4. (Amended) The method of claim 3 wherein the following expression is used to construct the time-domain averaged data train:

$$S_{\Delta}(t) = \int_{t}^{t+\Delta} dt' S(t') / \Delta$$

where $S_{\Delta}(t)$ is the provided time-domain signal.

5. (Amended) The method of claim 3, wherein the interval Δ_i is variable and the time-domain averaged data train is constructed at times $t = t_0, t_0 + \Delta, t_0 + 2\Delta, \ldots, t_0 + N\Delta$.

6. (Amended) The method of claim 3, wherein the time-domain signal is an NMR echo train.

9. (Amended) The method of claim 3 further comprising the step of averaging two or more constructed time-domain averaged data trains to increase the signal-to-noise ratio (SNR) of the measurement.

12. (Amended) A method for measuring an indication of attributes of materials containing a fluid state, comprising the steps of:

providing an NMR echo-train indicative of attributes of materials along the borehole;

constructing a time-domain averaged data train from said NMR echo train, the averaging being performed over two or more time intervals Δ_i, wherein at least two of said two or more time intervals Δ_i are different; and

computing an indication of attributes of said materials from the time-domain averaged data train.

13. (Amended) The method of claim 12 further comprising the step of averaging two or more constructed time-domain averaged data trains to increase the signal-to-noise ratio (SNR) of the measurement.

14. (Amended) The method of claim 12 wherein the following expression is used to construct the time-domain averaged data train:

$$Echo_{\Delta}(t) = \int_{t}^{t+\Delta} dt' \, Echo(t') / \Delta$$

where $Echo_{\Delta}(t)$ is the provided time-domain signal over a time interval Δ_i.

15. (Amended) The method of claim 12, wherein the time interval Δ_i is variable and the time-domain averaged data train is constructed at times $t = t_0, t_0 + \Delta, t_0 + 2\Delta, \ldots, t_0 + N\Delta$

20. (Amended) A method for increasing the spatial resolution of NMR logging measurements, comprising the steps of:

providing an NMR echo-train indicative of attributes of materials of interest; and

constructing a time-domain averaged data train from said NMR echo train, the averaging being performed over two or more time intervals Δ_i, wherein at least two of said two or more time intervals Δ_i are different.

21. (Amended) The method of claim 20 further comprising the step of averaging two or more constructed time-domain averaged data trains to increase the signal-to-noise ratio (SNR) of the measurement.

22. (Amended) The method of claim 20 wherein the following expression is used to construct the time-domain averaged data train:

$$Echo_{\Delta}(t) = \int_{t}^{t+\Delta} dt' Echo(t') / \Delta$$

where $Echo_{\Delta}(t)$ is the provided time-domain signal.

23. (Amended) The method of claim 20 wherein the time interval Δ_i is variable and the time-domain averaged data train is constructed at times $t = t_0, t_0 + \Delta, t_0 + 2\Delta, \ldots, t_0 + N\Delta$.

26. (Amended) A method for real-time processing of NMR logging signals, comprising the steps of:

providing real-time data corresponding to a single-event NMR echo train indicative of physical properties of materials of interest;

constructing a time-domain averaged data train from said NMR echo train, the averaging being performed over variable time interval Δ_i using the expression

$$S_{\Delta}(t) = \int_{t}^{t+\Delta} dt' S(t') / \Delta$$

where $S(t)$ is the provided measurement signal, and the time-domain averaged data train is constructed at times $t = t_0, t_0 + \Delta, t_0 + 2\Delta, \ldots, t_0 + N\Delta$; and

computing in real time an indication of the physical properties of said materials based on the constructed time-domain averaged data train.